

# **MULTI - MEDIA EVALUATION REPORT**

for

## **ROTH BROTHERS SMELTING CORPORATION**

THOMPSON ROAD, EAST SYRACUSE, NEW YORK, ONONDAGA COUNTY



December 1994

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**ROTH BROTHERS SMELTING M2P2 TEAM MEMBERS**

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signature                      date

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**PREPARED BY**  
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**Executive Summary:**

Roth Brother Smelting has had a history of RCRA, SPDES, Bulk Storage and Air Quality violations.

However, as a result of the heightened focus from M2P2, a change in the company's approach to environmental compliance has been evidenced. Specifically, work is underway on plant site to clean up contaminated soil to prevent migration of lead. As part of this project, surface drainage will be rerouted to a single outfall allowing for better compliance monitoring.

Air emissions are being stack tested as a result of modified certificated to operate. Aluminum furnaces are being modified and melting processes upgraded to reduce fugitive air emissions.

Bulk Storage compliance has been achieved.

In summary, past RCRA, Bulk Storage, SPDES and Air violations must be dealt with in such a way as to insure future compliance with environmental regulations and pollution prevention.

**Introduction:**

Roth Brothers Smelting Corporation has been selected as a Multi-Media candidate due to previous and existing potential impacts to multiple environmental media (soils, groundwater, surface water, and air).

An initial organizational meeting of the M2P2 team was held July 27, 1994. An introduction of the M2P2 program and overall plant tour was conducted August 9, 1994. Comprehensive inspections were held September 21 for Air and Water, September 22 for Chemical Bulk Storage and Petroleum Bulk Storage, and September 23 for RCRA.

**Facility Background:**

Roth Brothers Smelting started in the secondary metal business in 1931. In 1949 Mr. Joseph Roth moved operations to the present location on Thompson Road, in the Town of Dewitt, Onondaga County.

Various metals were processed at the plant depending on the economic climate and demand by industry. Zinc, aluminum, copper, lead, and solder (lead and tin) were purchased as scrap and processed by use of furnaces to create specification products for industry.

Today the facility takes in aluminum as various forms of scrap and produces aluminum ingots primarily for the automotive industry. There are approximately 200 full time employees at Roth Brothers Smelting working two 12 hour shifts 336 days per year. There are two separate plants. Plant 1 located on the east side of the railroad tracks and contains processing facilities for aluminum chips (high grade scrap) and also 3 aluminum furnaces. Plant number 2 located on the west side of the railroad tracks receives all grades of aluminum scrap then crushes and bakes the aluminum to remove grease and oil. Aluminum production is presently at 140 million pounds annually. Plant location and site plans are found in appendix 1.

Air emissions are associated with aluminum processing and smelting. Hazardous waste is produced as a by-product of the smelting and is collected in the baghouse dust, then shipped off-site to a licensed TSDF. Cooling water is discharged to outfalls from the aluminum ingot molding coolers. Process diagrams are found in appendix 2.

**Environmental Laws and Regulations:**

The laws and regulations that apply to Roth Brothers Smelting Corporation are:

**Water:** 6NYCRR Part 650 (permit/engineering), Part 700 (Water Quality), Part 750 (permit reporting)

**Air:** 6NYCRR Part 201, (permits), Part 212, (process exhaust)

**Hazardous Substances Regulation: 6NYCRR**

Part 370 - Hazardous Waste Management: General Requirements

Part 371 - Identification and Listing of Hazardous Wastes

Part 372 - Haz Waste Manifest System and Related Standards

Part 373 - Standards for Owners and Operators of H W Facilities

Part 376 - Land Disposal Restrictions

**Chemical Bulk Storage:** PART 598 Handling and Storage of Hazardous Substances

**Petroleum Bulk Storage:** 6NYCRR Part 612, (registration), 613, (handling and storage), 614, (standards for new and modified tanks)

**Uniform Procedures Act,** 6NYCRR Part 621 (Water, Air and Hazardous Substance Permits must comply with UPA)

**State Environmental Quality Review Act,** 6NYCRR Part 617, (modifications and new permits must under go a SEQR review).

**Issued Permits/Registrations/Certificates, Pending Applications,  
Consent Orders and Compliance Status:**

**Water:**

SPDES Permit # NY0110311 for 4 outfalls, effective date: 10/1/91  
expiration date 10/1/96 sanitary pretreatment and a consent order  
may be pending, (appendix 3)

**Hazardous Substance Regulation:**

Their Part 373 permit expired 3/30/92. All hazardous waste  
storage operations were required to undergo closure within 90  
days. This was not done in the appropriate time frames. A RCRA  
Post Closure Order, (appendix 4), signed in October 1994 covers  
the on-site stabilization and long term sampling program for an  
area of the plant where levels of lead and PCB's have been found.  
The stabilization of the soils should prevent the leaching of  
the lead which has concentrations in excess of standards.

During 1992 the company stored PCB waste on-site in excess of 90  
days. This is a violation of the RCRA regulations. The  
approximately 85 tons of contaminated baghouse dust had  
concentrations ranging from 50 ppm to over 5,000 ppm. The  
material was ultimately disposed of at a facility in Alabama.  
The violations have not been addressed; pending the issuance of  
an M2P2 order.

**Air:**

Emission points 312600 0420 00012, 00013, 00014 located in plant  
2 were issued 8/2/94 and expire 8/2/95; 00018, 00022, located in  
plant 1 were issued 8/2/94 and expire 8/2/95; a Permit to  
Construct was issued 5/31/94 for 00021; the Certificate to  
Operate expires 5/31/99; a Permit to Construct 00023 issued  
10/8/93, expired 10/8/94; (appendix 3) submission of permit  
applications for the 3 reverberatory stacks and roof monitors  
have been requested; a consent order may be required to address  
fugitive air emissions. At this time the facility is out of  
compliance with air Regulations due to fugitive excursions.

**Chemical Bulk Storage:**

Tanks have registration/license number 7-000057

**Petroleum Bulk Storage:**

Tanks have registration/license number 7-437999

Spill number 9303186 occurred 5-11-93  
Permits and certificates are attached as appendix 3.



**MULTI-MEDIA INSPECTION**

**Water Inspection Report:** The SPDES portion of the facility's multi-media inspection was performed on September 21, 1994.

For the items checked, the facility was found to be out of compliance for the following:

1) Violations of the SPDES permit's maximum daily effluent limits of mass loadings or concentrations for oil and grease, lead, zinc, copper, ph, surfactant, and aroclors (PCB's) 1242 and 1248 have occurred for several reporting periods since October 1991. Review of the Discharge Monitoring Reports (DMR's) for the outfalls indicates the following violations:

<u>PARAMETER</u>	<u>MONTH</u>	<u>YEAR</u>	<u>OUTFALL</u>
Oil and grease	November	1992	004
	April	1993	004
	December	1993	004
	December	1993	001
	March	1994	004
	August	1994	004
Lead	November	1991	Sum of 001, 002 & 005
	February	1992	Sum of 001, 002 & 005
	March	1992	Sum of 001, 002 & 005
	December	1992	Sum of 001, 002 & 005
	April	1993	Sum of 001, 002 & 005
	February	1994	Sum of 001, 002 & 005
	August	1994	Sum of 001, 002 & 005
Copper	October	1991	Sum of 001, 002 & 005
	March	1993	Sum of 001, 002 & 005
	June	1994	Sum of 001, 002 & 005
Zinc	February	1992	001
	March	1992	001
	November	1992	001
	June	1994	004
ph (minimum)	November	1993	001
	December	1993	001
	January	1994	001 (2)
	February	1994	001
	March	1994	001
	March	1994	002

Aroclor 1248	February	1992	002
	January	1993	004
	April	1993	004
	May	1993	004
	September	1993	004
	December	1993	004
	February	1994	001
	March	1994	004
	March	1994	001
	April	1994	004
	July	1994	004
Aroclor 1242	March	1992	001
	March	1992	002
Surfactant	March	1993	001

2) Quarterly exceedances of the SPDES permit's action level limit for Boron have occurred for all reporting periods since the effective date (October 1, 1991) of the most recent permit modification. Review of the Discharge Monitoring (DMR's) for the outfalls indicates the following Boron action level exceedances (14):

<u>YEAR</u>	<u>QUARTER</u>	<u>OUTFALL</u>	<u>SHORT TERM HIGH INTENSITY TEST RESULTS DUE</u>
1991	4th	004	March 31, 1992
1992	1st	004	June 30, 1992
	1st	001	June 30, 1992
	2nd	004	September 30, 1992
	3rd	004	December 31, 1992
	4th	004	March 31, 1993
1993	1st	004	Completed and submitted
	2nd	004	Completed and submitted
	2nd	001	Completed and submitted
	3rd	004	Completed and submitted
	4th	004	Completed and submitted
	4th	001	Completed and submitted
1994	1st	004	Completed and submitted
	2nd	004	Completed and submitted

Violations (6) of the SPDES permit's action level requirements have occurred due to their failure to submit the short-term high intensity monitoring program test results for the action level exceedances for Boron.

3) Violations of the SPDES permit's monitoring requirements for several parameters at some outfalls have occurred for several reporting periods since October 1991. Review of the DMR's indicates the following violations for non-reporting:

a. Outfalls 001 and 004 have parameters that quantitative results were not reported on the DMR and a discharge occurred during that reporting period. The seventeen (17) unreported parameters for these outfalls are oil and grease, sulfite, dissolved sulfide, total cadmium, total copper, total iron, total lead, total zinc, total antimony, total aluminum, PCB arochlor 1016, PCB arochlor 1221, PCB arochlor 1232, PCB arochlor 1254, PCB arochlor 1260. The following DMR's have these non-reporting violations:

<u>YEAR</u>	<u>MONTH</u>	<u>OUTFALL</u>
1993	February	001
	July	001
	July	004
	August	001
	September	001
1994	January	001
	June	001
	July	001
	August	001

b. Outfall 005 has parameters that quantitative results were not reported on the DMR and a discharge occurred during that reporting period. The four (4) unreported parameters for this outfall are dissolved sulfide, total copper, total lead, and phenols. The following DMR's have these non-reporting violations:

<u>YEAR</u>	<u>MONTH</u>	<u>OUTFALL</u>
1993	February	005
	April	005
	July	005

4) A violation of the SPDES permit's general conditions (Part II - Section 9a)/6NYCRR, Parts 652.2 and 652.4 occurred for the unauthorized removal of a treatment device (oil/water separator) from outfall 001 on or about the first calendar quarter of 1993.

5) An unpermitted industrial discharge potentially exists on the north side of Plant #2. This potential discharge point is in the vicinity of the waste, rubble and floor sweepings and is potentially subject to water discharge for run-off and possible leachate from the piles. A request for a permit modification shall be submitted to the Department within 60 days of the completion of activities associated with the DHWR's corrective action plan.

**Hazardous Substance Regulation Inspection Report:**

On September 23, 1994 a full RCRA inspection was conducted at the facility. The housekeeping at the facility was vastly improved since the previous inspection on July 23, 1993. It was apparent that they are paying more attention to hazardous waste handling and have assigned one management person and one operator to be responsible in this area.

The source of the PCB contaminated waste is the processing of aluminum twitch. RBS has instituted a sampling program for the baghouse dust to insure that any hazardous waste is handled properly. They did have some problems related to raw materials being stored in the area designated for haz waste.

There was also a violation of Part 372.2(a)(8)(ii) because of a drum of D008 hazardous waste stored over ninety days. This was tyvek suits and other materials from the closure of their haz waste storage area. They had misplaced the drum and it was evidently found when they prepared for the M2P2 inspection.

**Air Inspection Report:**

On September 21, 1994 a comprehensive inspection was conducted on Roth Brothers Smelting on Thompson Road in East Syracuse. Plant 1 and plant 2 were toured process operations were reviewed and stack emissions were visually evaluated.

Findings: Plant 2 all equipment was operational at the time of the inspection. All permits were current and stack emissions were not visible. This facility will be stack tested in the near future to evaluate potential PCB, dioxin, and furan emissions. All pollution equipment was being well maintained.

Plant 1 has significant problems. Below is an item by item issues list.

- 1) The hood on the charge well for furnaces 6, 7 and 8 are malfunctioning. The design on the hoods appears to be inadequate to properly draw smoke generated during charging and drossing processes into the baghouse control device.
- 2) Roof ventilators are located in places which short circuit the process exhausts and promote emissions to the outside atmosphere. The roof ventilators are considered unpermitted emission points. The total number of roof ventilators is yet to be determined.
- 3) Furnace 6, 7 and 8 have refractory stacks which were exempted from 6NYCRR Part 201.6(d) were found to be emitting process exhaust in excess of 40% opacity.
- 4) Fugitive emissions from the dross storage area has been the cause of several complaints from Hoffman Air Filtration Company located adjacent to Roth Brothers Smelting.

Wheelabrator has been hired to develop a control strategy to abate the air problems from plant number 1. Upon Department review and approval the specific findings of the report may be used for an action plan in potential Consent Order.

**Chemical Bulk Storage Inspection Report:**

Chemical tank registration number 7000057 listed as case number 7782505 - chlorine installation meets standards as of the date of the inspection.

**Petroleum Bulk Storage Inspection Report:**

On September 22, 1994 3 previously identified petroleum bulk storage tanks were inspected. These unregistered above ground tanks used for petroleum storage have been added to the facilities registration certificate as follows:

<u>TANK</u>	<u>VOLUME</u>	<u>PRODUCT</u>
#008	275 gallon	motor oil
#009	500 gallon	waste oil
#010	275 gallon	kerosene

Color coding has been addressed.

An up graded inventory system has been introduced by the owner's engineer.

Above ground storage tanks also have a better tracking system for inspections. Malcolm Pirnie has furnished a copy of the ten year inspection for tanks no. 4 & 5.

**Pollution Prevention Activities:**

**Water:** None, to present date.

**RCRA:** The only Hazardous Wastes generated at the facility are related to the PCB contaminated dust produced from the processing of the aluminum twitch. The company has taken measures to try to reduce the generation of PCB contaminated dust through better management of the twitch. They are currently running batches of twitch in a method which allows them to control the production of baghouse dust containing PCB contamination. In the past the twitch was mixed with the other materials for processing. This meant that larger quantities of dust became contaminated.

The two remaining alternatives for reduction are not using the twitch or finding a method of sampling the twitch in advance. This would eliminate the PCB contaminated twitch from the process stream. They have not been able to come up with a reasonable method of sampling and have made the business decision to continue using the twitch. RBS uses this very inexpensive material as a method of reducing their raw material costs and remaining competitive.

**Air:** The aluminum reverberatory furnaces were recently equipped with an enhanced oxygen system to increase the efficiency of the combustion of the natural gas. This process gives a higher melt ratio of fuel to aluminum and hence a savings in natural gas. Also the more efficient combustion will likely result in reduced emissions.

A dross press is being proposed which will eliminate fugitive emissions from the dross storage area.

The reverberatory furnace doors are going to be submerged to prevent dross from flowing into the molten metal pit. This will prevent thermitting (burning in the atmosphere), the cause of highly visible aluminum oxide emissions.

Aluminum scrap pretreatment is being proposed for all material destined for processing in the furnaces. This will reduce emissions by removing dirt and oils from the scrap.

**Compliance History:****Water:**

The facility sporadically exceeds the SPDES Permit effluent limits for individual arochlors, lead, copper, zinc, and oil and grease. Also, action level exceedances for Boron occur frequently. Potentially supplemental treatment or process changes may be needed to bring the facility in compliance with the SPDES permit's limitations / conditions.

The facility also has unpermitted run-off from a contaminated dump area, which is being remediated under the direction of DHWR. A permit modification may be required for this discharge.

**Hazardous Substances Regulation:**

Aside from the area of the Plant 2 site which is being remediated, major RCRA issues are the outstanding violations from 1992. These violations resulted from the company's storage of PCB contaminated hazardous waste on site in excess of 90 days. The waste dust contained levels between 50 ppm and 5,000 ppm of PCBs. The violations are considered High Priority Violations (HPV) in the RCRA program.

**VIOLATIONS NOTED DURING THE JULY '93 INSPECTION:**

1. 373-3.9(d)(2) & 373-3.3(b) Containers had the potential to leak for reason noted above.

The volume of waste on site caused some cardboard boxes to be stored in the front part of the storage shed where rainwater could cause wetting of the boxes with a loss of structural strength of the cartons.

2. 373-3.9(d)(3) Containers were not labeled with "other words identifying their contents."

The boxes in storage did not have writing on them indicating their contents.

3. 372.2(a)(8)(ii) Storage of waste for more than 90 days.

Manifest records and dates on the waste containers revealed that Roth had been storing this PCB dust since January of 1992. Manifests to Model City show a shipping date of August 11, 1992, and no prior shipments of waste had occurred since the beginning of 1992, so they are in violation of the 90 day storage rule.



Analytical data provided to us by Roth Brothers shows sampling dates for PCBs as early as February 13, 1992. According to the data the company was faxed results possibly as early as Feb. 3 showing levels of PCBs in the baghouse dust in excess of 250 mg/l. This indicates they knew there was a problem at that date at the latest. This office was never notified of this by the permittee.

4. **373-2.7(c)(4) and (d)(1) Facility must begin its closure within 90 days of shipment of the final volume of wastes.**

The facility did not begin their closure within the proper time frames. The permit was for the storage of lead waste. Incidentally they requested that their permit be deleted in March 1992 while they were storing the PCB wastes on-site.

5. **373.2(c)(1)(i) Copy of the manifest must be available to the inspector.**

Computer check indicated that a manifested shipment went out on March 13, 1992. This manifest was not available at the time of the inspection.

6. **376.1(g)(1)(i) Land Disposal Restriction states that generator must determine if the wastes are prohibited from land disposal by testing and then submit notification to the TSD if they are prohibited.**

Roth Bros. determined that the waste was over the regulatory Land disposal prohibition, as is evident from analysis results provided to us. This waste was sent to Chemical Waste Management with no LDR notification, and was rejected.

7. **376.1(g)(1)(vii) Generators must maintain copies of all certifications on site for at least five years.**

The inspection revealed 30 missing LDR forms for manifests from 1991 waste disposed of at Michigan Disposal.

8. **376.5 (a)(1)(i) Storage for more than 90 days.**

They stored restricted wastes for more than 90 days.

**Air:**

A Consent Order signed by Commissioner Henry Diamond on March 14, 1972 required the company to install air pollution control equipment and operate in a manner to minimize air pollution.

On August 19, 1992 notification by Thomas Jarzab a DEC monitor from Region 9 was made to this office of a shipment of PCB contaminated baghouse dust from Roth Brothers Smelting having been received at a Landfill in Model City, New York. An inspection of Roth Brothers Smelting uncovered that previously decommissioned emission points numbered 00012, 00013, 00014 and 00018 were being used for aluminum processing without the Department having been notified. It was further learned that PCB's were not listed on the current Certificates to Operate.

It is possible that PCB, dioxin and/or furan emissions have been released to the atmosphere.

**Petroleum Bulk Storage:**

Roth Brothers Smelting was not in compliance with registration requirements for the tanks located at the facility prior to the August 8, 1994 visit. Upon explanation of the requirements, full compliance was achieved.

One (1) gasoline spill (number 9303186) was reported on May 11, 1993. Twenty (20) cubic yards of soil were removed during installation of the two thousand (2000) gallon tank because stained soil was observed around pump island.

**Chemical Bulk Storage:**

Chemical Bulk Storage is in compliance with rules and regulations as of this date.

**Recommendations:**

**Confidentiality**

In order to protect the confidentiality of those Department opinions noted in the report recommendations section, it is suggested that two versions of the M2P2 Inspection Evaluation Report be developed for distribution. One version of the report would contain items 1 through 11 as noted in Section IV above and be available to the general public. The second version of the report would contain items 1 through 12 as noted in Section IV above and be available to Department personnel. and/or government personnel (ie. USEPA) only.